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MONSTRILLA REIDAE, A NEW SPECIES OF MONSTRILLOID COPEPOD FROM THE CARIBBEAN SEA OFF MEXICO

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ABSTRACT

A new monstrilloid species, *Monstrilla reidae,* collected during surface plankton tows in a Mexican Caribbean bay is described from male specimens. The species has six furcal setae, which separates it from most *Monstrilla* species. However, it is best distinguished as a new species by the structure of the genital apparatus, which is unique throughout the group, only showing some affinity to *M. anglica.* This is the second record of the genus in the Caribbean Sea off Mexico.

Surface plankton samplings were carried out at the Bahía de la Ascensión, a shallow water embayment located in the central part of the east coast of the Yucatán Peninsula. This bay belongs to the UNESCO Biosphere Reserve of Sian Ka'an, which includes several aquatic environments with a high biodiversity which remain largely unknown. Plankton samples contained several specimens of a new monstrilloid copepod. This species belongs to the genus *Monstrilla,* the first monstrilloid genus created (Sewell, 1949), and also the most diverse within the Monstrilloida. This group of semi-parasitic copepods with a planktonic adult stage was extensively reviewed by Isaac (1975), who recognized a total of 14 species of *Monstrilla.* Since then, very few works on the group have been published. Huys and Boxshall (1991) state that Monstrilloida is a group in urgent need of revision.

Many species are incompletely known, often because only one sex has been recorded, and because of their semi-parasitic life cycle, which makes them a group not easily captured by plankton tows. Moreover, many monstrilloid species were described from only one specimen (Davis, 1947, 1949). There are very few records of this group in the tropical northwestern Atlantic Ocean. Reid (1990) lists only four species from coastal Mexico, Central America and the Caribbean Sea, two of them belonging to the genus *Monstrilla,* one to *Monstrillopsis,* and one to the genus *Strilloma* (*S. grandis* Giesbrecht). However, since *Strilloma* Isaac is not a valid genus, the latter species should be included in *Monstrilla* (Huys and Boxshall, 1991). There is only one previous record of *Monstrilla* (*M. barbata*) in the Mexican Caribbean Sea (Suárez and Gasca, in press). In this communication a new species of a monstrilloid of the genus *Monstrilla,* is described.

Monstrilla reidae new species

Material Examined.—Holotype: Male, undissected, deposited in the U.S. National Museum of Natural History, Smithsonian Institution, under number USNM-251698. Paratype: Male, undissected, deposited in the U.S. National Museum of Natural History, Smithsonian Institution, under number USNM-251699. Both specimens preserved in 70% ethanol.

Type Locality.—Bahía de la Ascensión, in the central part of the eastern coast of the Yucatán Peninsula (19°45.09'N; 87°30.00'W).

Description.—MALE. Total body length of holotype 2.3 mm, length of paratype 2.4 mm. Cephalothorax almost half length of whole body. Oral papilla located 0.28 from the anterior margin of the cephalothorax. One dorsal pair of small eyes (Fig. 1a).

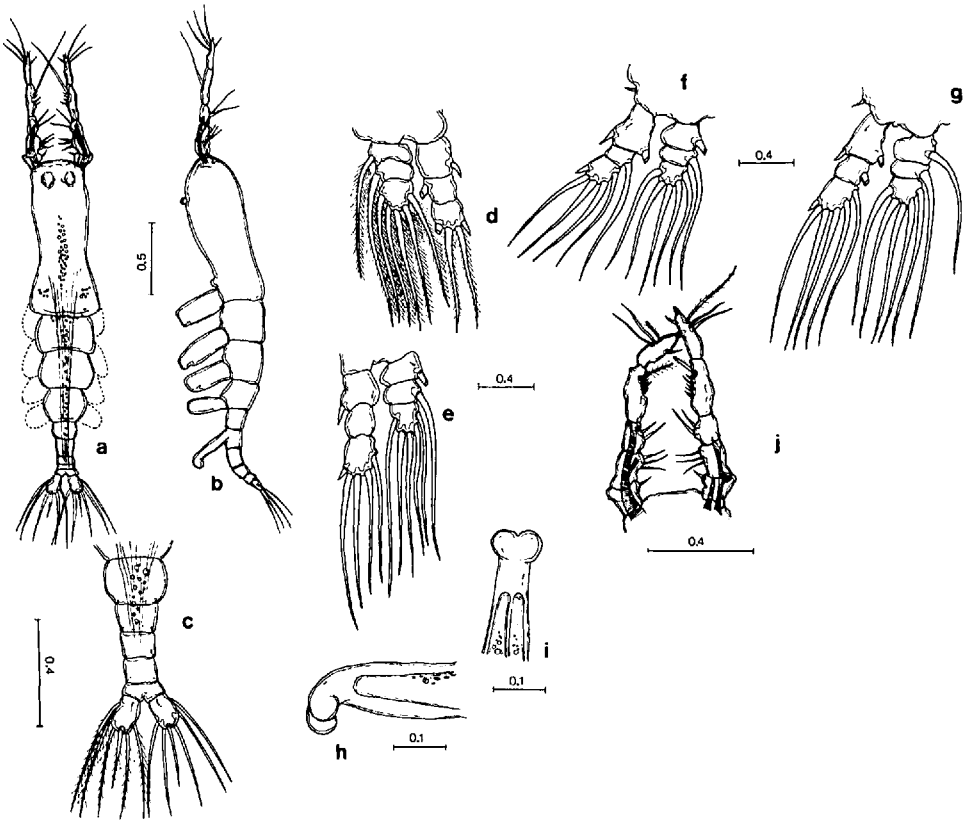

Figure 1. *Monstrilla reidae* n. sp., male. a) habitus, dorsal; b) habitus, lateral; c) abdomen, dorsal; d) right leg 2, posterior; e) left leg 3, posterior; f) left leg 1, posterior; g) left leg 4, posterior; h) genital apparatus, lateral; i) genital apparatus, ventral; j) antennulae, dorsal. All scales in mm.

As usual in male *Monstrilla,* antennule 5-segmented, armed with 1; 3; II; I,5; III,1 setae and spines (spines in arabic, setae in roman numbers). Ratio of length of the antennule segments 25:30:13.2:19.3:12.5 = 100. Antennule slightly about 0.38 total length of body and 0.67 length of cephalothorax.

Incorporated first pedigerous somite and succeeding three pedigerous somites each bearing a pair of well developed swimming legs, approximately equal in length. Basis of four swimming legs very large and strong, clearly protruding laterally in dorsal view.

Endopodites and exopodites of four swimming legs each with three segments (Fig. 1e, d, f, g). Armament formula of swimming legs as:

	Basis	Exopodite	Endopodite
leg #1	I-0	I-1; 0–1; I,2,2	0-1; 0–1; 1,2,2
leg #2	I-0	I-0; 0–1; I,2,1	0-1; 0–1; 1,2,2
leg #3	I-0	I-0; 0–0; I,2,2	0-1; 0–1; 1,2,2
leg #4	I-0	I-1; 0–1; I,2,3	0-1; 0–1; 1,2,2

Fifth legs absent. Urosome consisting of fifth pedigerous, genital double and two free abdominal somites, length ratio of anterior to posterior segments being 30.9:24.6:16.5:18.2:9.8 = 100.

Genital complex on first abdominal segment, with a genital apparatus protrud-

ing ventrally, 0.77 times length of remaining segments of abdomen (Fig. 1b). Genital apparatus nearly cylindrical, with two distal rounded structures (Fig. 1h, i).

Caudal rami 1.1 times wider than long, each bearing 6 setae. Of these, 5 are well developed and subequal in length and breadth, remaining seta shorter and located next to medialmost seta.

FEMALE. Unknown.

Etymology.—This species is dedicated to Dr. Janet W. Reid, of the U.S. National Museum of Natural History, Smithsonian Institution, Washington, D.C., for her work on Copepoda.

DISCUSSION

The species here described was included in the genus *Monstrilla* for the presence—in the male—of four abdominal somites (double genital and two free somites), reduced eyes, and for the location of the oral papilla, which is more than 0.25 of the length along the cephalic segment (Sewell, 1949; Isaac, 1975).

The lack of fifth legs separates *M. reidae* from most *Monstrilla* species, resembling only *M. obesa* Isaac, *M. minuta* Isaac and *M. rugosa* Davis. However, these three species show, respectively, a very reduced genital apparatus, only consisting of two small protuberances, a globular genital apparatus with one posteriorly-pointing protuberance, and a small serrated genital protuberance, widely differing from the genital structure described for *M. reidae.*

Monstrilla reidae differs from all other previously described species of *Monstrilla* in several features, especially in the unique structure of the genital apparatus. The only other species which resembles *M. reidae* in this feature is *M. anglica* Bourne, which bears an elongated genital apparatus with two branches, and a short protuberance between them (Isaac, 1975). In *M. reidae,* the corresponding structure is also elongated, but it has no proximal protuberance, and it is not branched. In lateral view, a drawing of this structure shown by Sewell (1949) for *M. anglica* is similar to the corresponding structure in *M. reidae,* but in the former species, the genital apparatus is bent sharply posteriorly, is clearly bifurcated and almost as thick as the genital somite.

M. reidae also differs from *M. anglica* in the proportional lengths of the five antennular segments (Sewell, 1949), and in their armament; for example, *M. anglica* has a group of four setae arising from the anterior margin of the distalmost antennular segment, while *M. reidae* bears only three. Also, *M. anglica* has a group of three short setae arising from the anterior margin near the distal end of the same segment, while the new species bears only one short spine.

The location of the shortest furcal seta in *M. anglica* is between the first and second setae counting from the lateralmost seta inwards or medially, while in *M. reidae,* this seta is borne between the fourth and fifth furcal setae.

Reported lengths of *M. anglica* are 1.25 to 1.70 mm (Isaac, 1975); *M. reidae* is clearly a larger species (2.3 mm). With the exception of *M. anglica,* the new species shows few affinities to the other *Monstrilla* species, and the differences described are enough evidence to designate *M. reidae* as a new species. *M. reidae* appears to be a common monstrilloid in the Mexican Caribbean Sea coastal area, since it has been collected also in the southern part of this coast, close to Chetumal Bay (18°45'N; 87°40'W), and in several localities of the Bahía de Ascensión. This is the second record of the genus *Monstrilla* from the Caribbean Sea off Mexico.

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